

L6 ANSWER 23 OF 34 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:487868 CAPLUS

TITLE: Covalent bonding of dendrimers to silica surfaces

AUTHOR(S): Majerle, R. S.; Bambenek, C. M.; Braun, S. B.; Rice, J. A.

CORPORATE SOURCE: Department Chemistry and Biochemistry, South Dakota State University, Brookings, SD, 57007, USA

SOURCE: Book of Abstracts, 214th ACS National Meeting, Las Vegas, NV, September 7-11 (1997),

MACR-027. American Chemical Society: Washington, D. C.

CODEN: 64RNAO

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB A first-generation **dendrimer** contg. terminal cyano groups has been synthesized and covalently

**attached** to silica gel. The amt. of **dendrimer attached** to the silica surface was detd. by elemental anal. The resulting composite material was characterized by  $^{13}\text{C}$  and  $^{29}\text{Si}$

CP-MAS solid-state NMR and FT-IR studies. **Attachment** of the **dendrimer** to the surface has been estd. to be 0.49 mmol per g of silica gel via elemental anal., comparable to studies

involving the **attachment** of alkyl **silanes**. [Equation Omitted].

L6 ANSWER 16 OF 34 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:146065 CAPLUS

TITLE: Nanoscale patterning of self-assembled dendrimer  
monolayers using scanning probe  
lithography

AUTHOR(S): Tully, David C.; Trimble, Alexander R.; Frechet, Jean M.  
J.; Wilder, Kathryn; Quate,

Calvin F.; Ginzton, E. L.

CORPORATE SOURCE: Department of Chemistry, University of California,  
Berkeley, CA, 94720-1460, USA

SOURCE: Book of Abstracts, 217th ACS National Meeting, Anaheim,  
Calif., March 21-25 (1999),

POLY-029. American Chemical Society: Washington, D. C.

CODEN: 67GHA6

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB Poly(benzyl ether) dendrons (1a,b) were functionalized at the focal point as  
their 10-undecenoyl esters  
and then hydrosilylated with chlorosilanes. Polished, n-type, Si(100) wafers  
were treated with

**silanes** (2a,b) to afford self-assembled monolayers from the [G-3] dendrons.

These covalently

**bound dendrimer** monolayers were characterized by AFM, contact angle  
goniometry, and

optical ellipsometry. The **dendrimer** films operated as effective resists for  
Scanning Probe

Lithog. (SPL). In the vicinity of the intense elec. field under the scanning  
probe tip, the wafer

surface undergoes a field-enhanced oxidn., whereby the **dendrimer** film is  
oxidatively decompd.

The exposed regions of the wafer surface can be etched in HF to produce a pos.  
tone image.